

KEY OBSERVATIONS AND FINDINGS

Benefits and Opportunities of Natural Gas Use, Transportation, and Production



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INTRODUCTION

This report describes how natural gas and its associated liquids (lease condensate and natural gas plant liquids) contribute to the U.S. economy both at a national level and in terms of the economies of individual states. The economic contribution is estimated for the historical year of 2015 and is projected to 2040 under three scenarios drawn from EIA's AEO.

SCOPE

Economic impacts are measured in terms of the number of jobs that are supported, the wages paid for those jobs, and the total value added (that is, the contribution to the national GDP and to its constituent state products). A unique feature of this report is that it defines the natural gas value chain as going **“all the way through consumption” to include the economic activity of converting the natural gas to other products and useful energy services.**

BASE YEAR RESULTS

Shown to the below are the job counts, wages and value added by three segments of the natural gas value chain: “end use,” “infrastructure,” and “production.” The end use segment is made up of the industries that convert natural gas and its associated liquids to electricity, petrochemical and other products and the industries that manufacture, sell, install and maintain gas-fired appliances and equipment used in the residential, commercial, vehicle and industrial sectors.

The end use segment is the largest of the three with 43.6% of the total jobs. The infrastructure segment— which is made up of gatherers, gas processing, petroleum refining, natural gas distribution, and propane distribution— contributes 31.2% of the 2015 total jobs. The production segment— consisting of oil and gas production companies and their suppliers of goods and services— contributes the remaining 25.2% of 2015 total natural gas value chain jobs.

Direct, Indirect and Induced Economic Impacts: 2015

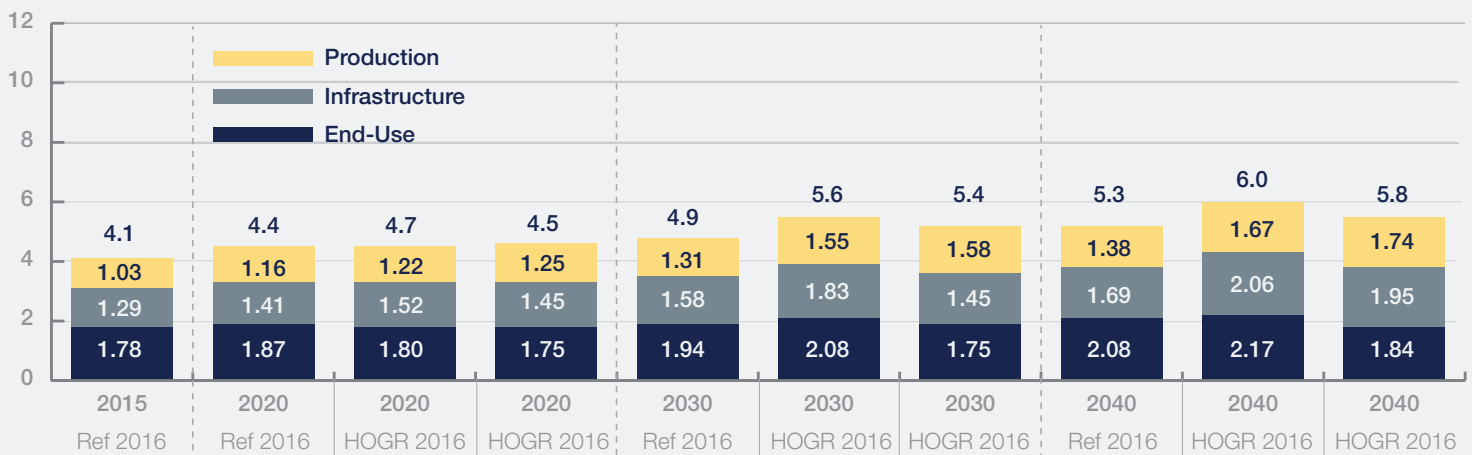
Segment	Employment (# of workers)	Labor Income (\$ million)	Value Added (\$ million)
End-Use	1,788,207	106,941	271,663
Infrastructure	1,282,306	84,341	167,624
Production	1,033,510	78,204	111,390
All Segments	4,104,023	269,486	550,677



FORECAST RESULTS

Estimates for total jobs (direct, indirect and induced) through 2040 are shown to the right for the three AEO cases. The growth rate in employment for the Reference Case is 1.02% per year from 2015 to 2040 when total jobs reach 5.28 million. Due to the increased amount of oil and gas produced and consumed in 2016 High Oil and Gas Resource Case, the rate of growth in employment is higher in that case at 1.55% per year. By 2040 there are 0.75 million more jobs compared to the Reference case. See Below.

Forecast of Total Jobs (Millions)



The 2015 High Oil and Gas Resource Case falls in between the other two cases with an average growth rate in total employment of 1.42% per year. The results for wages show similar trends among the three cases.

The forecasted direct, indirect and induced value added for all three segments combined grows from \$550 billion in 2015 to \$902 billion in the Reference Case, an annual growth rate of 2.00%. The 2016 High Oil and Gas Resource Case has a higher growth rate of 2.34% per year and reaches \$980 billion by 2040. The 2015 High Oil and Gas Resource Case also grows faster (2.26% per year) than the Reference Case and reaches \$962 billion by 2040.

EXPORTS

The natural gas value chain contributes substantially to U.S. exports of commodities. In 2015 gas-related exports totaled over \$37.6 billion. This includes primary hydrocarbons, refined petroleum products, petrochemicals, fertilizers, plastics and resins. The fastest growth in natural gas value chain exports are expected to be in LNG exports and petrochemicals with substantial growth also expected in pipeline natural gas and NGLs. Such exports are expected to grow at annual rates of 3.4% to 3.8% per year, which is 60% to 70% faster than the overall natural gas value chain.

CONCLUSION:

The natural gas value chain touches all states and a large number of industrial sectors supporting 2.9% of all non-farm jobs and contributing 3.1% of the national economy (GDP). These contributions to the U.S. economy are expected to grow in the future under each of the AEO scenarios examined here.